



PATENT ABSTRACTS OF JAPAN

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(54) NITRIDE SEMICONDUCTOR ELEMENT AND ITS MANUFACTURING METHOD**(57) Abstract:**

PROBLEM TO BE SOLVED: To provide a nitride semiconductor element whose operation voltage can be reduced by reducing contact resistance with electrodes, and its manufacturing method.**SOLUTION:** In a semiconductor laser element 100, a buffer layer 2, an undoped GaN layer 3, an N-GaN contact layer 4, an N-InGaN crack preventing layer 5, an N-AlGaIn clad layer 6, an MQW light emitting layer 7, a P-AlGaIn clad layer 8, and a P-GaN contact layer 9 are laminated in order on a (0001) face of a sapphire substrate 1. A ridge is formed on the P-GaN contact layer 9 and the P-AlGaIn clad layer 8, and unevenness is formed on the upper surface of the ridge. Unevenness is formed on the surface of a prescribed region of the N-GaN contact layer 4 which is exposed by etching. A P-electrode 10 and an N-electrode 11 are formed on the N-GaN contact layer 4 wherein unevenness is formed.**COPYRIGHT:** (C)2002,JPO

